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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,897

04/19/2006

Phillip Mark Hunter

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MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH, NC 27627

EXAMINER

WILLIAMS, ARUN C

ART UNIT

PAPER NUMBER

2838

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/528,897

Applicant(s)

HUNTER ET AL.

Examiner

Arun Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-5,7-13,15-22,25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ouwerkerk, USPAT 5,498,950.**

As for claims 1-3,7-12, 25 and 27 Ouwerkerk discloses and shows in Fig. 2 a battery management apparatus for managing a substring of cells in a string of cells, the apparatus comprising: a power charging lines(31) (applicant's DC bus; electrical vehicle); a decoder and driver circuit(18) (applicant's multiplexer/demultiplexer circuit) operative to selectively couple nodes of the substring of cells that a serially connected to the DC bus;(col.4, lines 12-24); independent controller (not shown)(col.3, line 24) (applicant's DC/DC converter) wherein isolated ports are implied;a sensor circuit (25)coupled to the DC bus; and a controller circuit(14), it is implicit for a communication (electrical) bus to be present in a circuit configuration (col.3, lines 16-62). Furthermore, discloses connecting the plurality of batteries to the sensing modules (19) (col.4, lines 41-46)(cl.7)

As for claims 13,15-17 Ouwekerk discloses when the battery voltage sensing circuit (22) senses the voltage (which also meets applicant's determine a status) of the each of the plurality of batteries and if a certain voltage is detected an order to charge the battery to a proper voltage level is activated. (col.4, lines 33-37).

As for claims 4,5,18-22, Ouwekerk discloses the controller(14) collects data from the outputs of the charge controller and battery balancer (11), state of charge (which meets applicant's determine a status and capacity testing) of each of the batteries (12) wherein impedance testing is implicit for detection of existence of the battery, balancing data and control signals(which meets applicant's generated test data) wherein a response is based on the data (col.5, lines 6-23)

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**7. Claims 6,23,24,26 rejected under 35 U.S.C. 103(a) as being unpatentable over Ouwekerk in view of Koenck et al, (Koenck), USPAT 4,709,202.**

As for claims 6,23,24, and 26, Ouwekerk differs from the claimed invention because he does not explicitly disclose sensing module, DC/DC converter and control modules are enclosed in a battery compartment, and an analog to digital (A/D) converter.

Koenck discloses and shows in Fig. 1-4 sensor modules (103), DC/DC converter (Fig. 16B, 16-1), control modules (Fig.2,14) in a battery compartment (Fig.4,18). He further teaches an analog to digital converter (Fig.16B,15-11) (col.2, lines 32-43)

Koenck is evidence that ordinary skill in the art would find a reason, suggestion or motivation to have sensing module, DC/DC converter and control modules are enclosed in a battery compartment, and to use an analog to digital (A/D) converter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ouwekerk by having sensing module, DC/DC

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converter and control modules are enclosed in a battery compartment, and to use an analog to digital (A/D) converter for advantages such as providing a portable battery powered system with great reliability and useful life (col.1, lines 34-35), as taught by Koenck.

**8. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouwekerk in view of Schmidt et al, (Schmidt), USPAT 5,821,729.**

As for claim 14, Ouwekerk differs from the claimed invention because he does not explicitly disclose transferring energy between at least one cell of the substring and the plurality of cells.

Schmidt discloses taking energy from a higher cell and directing (which meets transfer energy) it to a lower cell (col.2, lines 30-51)

Koenck is evidence that ordinary skill in the art would find a reason, suggestion or motivation to transfer energy between at least one cell of the substring and the plurality of cells

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ouwekerk by transferring energy between at least one cell of the substring and the plurality of cells for advantages such as having the ability to remedy the occurrence of voltage differences among cells (col.2, lines 30-33) , as taught by Schmidt.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Williams whose telephone number is 571-272-9765. The examiner can normally be reached on Mon - Thurs 6:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Arun Williams  
Examiner  
Art Unit 2838

AW

  
BAO Q. VU  
PRIMARY EXAMINER